Receive Image — 102

100

Receive Color Table of Entries, Each Entry Includes a Code and a True Color From a Predetermined Subset of all True Colors, the Entry Mapping the Code to the True Color — 104

Set Up Compression Dictionary to Be Color Table — 106

Set Prefix String to Empty — 108

Select First Pixel as Current Pixel — 110

Identify Base Color of Current Pixel — 112

Identify an Index Value of Current Pixel Corresponding to a Code Indicating a True Color in the Color Table that is Nearest to Base Color — 114

Identify a Set of Candidate Strings from the Compression Dictionary, Each Candidate String Corresponding to A Candidate Prefix String + A Code, the Code Indicating a True Color Approximately Matching the Base Color of Current Pixel — 116

Does Set Contain More than One String? 118 — Yes

Select One of the Candidate Strings to be Candidate String According to State of the Compression Dictionary — 120

No

Does Set Contain One String? 126 — Yes

No

Set Candidate String to be A Candidate Prefix String + Identified Index Value — 128

Set Prefix String to Be Candidate String — 122

Yes

Is Candidate String in Compression Dictionary? 130

Select Next Pixel as Current Pixel — 124

No

Add an Entry to Compression Dictionary, the Entry Mapping a Code to the Candidate String — 132

Output Code Representing Prefix String *to Compressed Representation* — 134

Set Prefix String to Be Identified Index Value — 136

Fig. 1

Color - Lookup Table	
Index (i)	TRUE COLOR
0	(x_0, y_0, z_0)
1	(x_1, y_1, z_1)
2	(x_2, y_2, z_2)
.	.
.	.
.	.
.	.
N	(x_N, y_N, z_N)

202 204 200

Fig. 2

Compression Dictionary

CODE(j)	STRING
0	$[(x_0, y_0, z_0)] \neq 0$
1	$[(x_1, y_1, z_1)] = 1$
2	$[(x_2, y_2, z_2)] = 2$
$\vdots$	$\vdots$
N	$[(x_N, y_N, z_N)] = N$
N+1	$[(TC_1), (TC_2), \ldots]_{N+1}$
N+2	$[(TC_1), (TC_2), \ldots]_{N+2}$
$\vdots$	$\vdots$
N+M	$[(TC_1), (TC_2), \ldots]_{N+M}$

302

304

200

300

where
$TC_k \in$ Set of True Color Codes in The Color-Lookup Table 200

Fig. 3

Sample Compression Dictionary
CODE	STRING
0	[(0,0,0)] = 0
1	[(5,0,0)] = 1
2	[(10,0,0)] = 2
⋮	⋮
72	[(250,75,75)] = 72
⋮	⋮
213	[(64,267,84)] = 213
⋮	⋮
N	[(255,255,255)] = 255
⋮	⋮
456	[72,213]
⋮	⋮
N+M	[6,7,192,151]

Fig. 4

* Kernel in which the error value of a pixel is used to adjust a true Color of those pixels adjacent and following in sequence that pixel
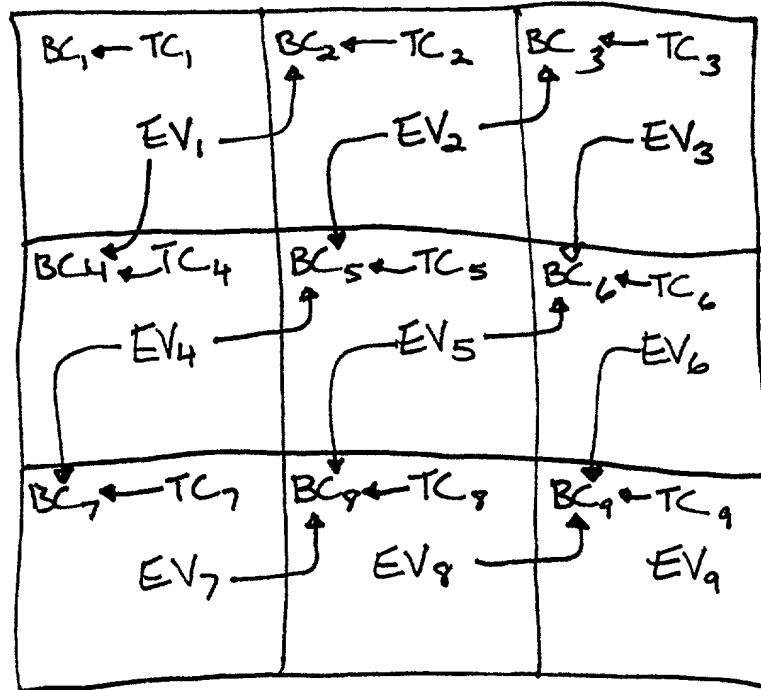

$$BC_1 \leftarrow TC_1 \qquad BC_2 \leftarrow TC_2 \qquad BC_3 \leftarrow TC_3$$

$$EV_1 \qquad EV_2 \qquad EV_3$$

$$BC_4 \leftarrow TC_4 \qquad BC_5 \leftarrow TC_5 \qquad BC_6 \leftarrow TC_6$$

$$EV_4 \qquad EV_5 \qquad EV_6$$

$$BC_7 \leftarrow TC_7 \qquad BC_8 \leftarrow TC_8 \qquad BC_9 \leftarrow TC_9$$

$$EV_7 \qquad EV_8 \qquad EV_9$$

Fig. 5